

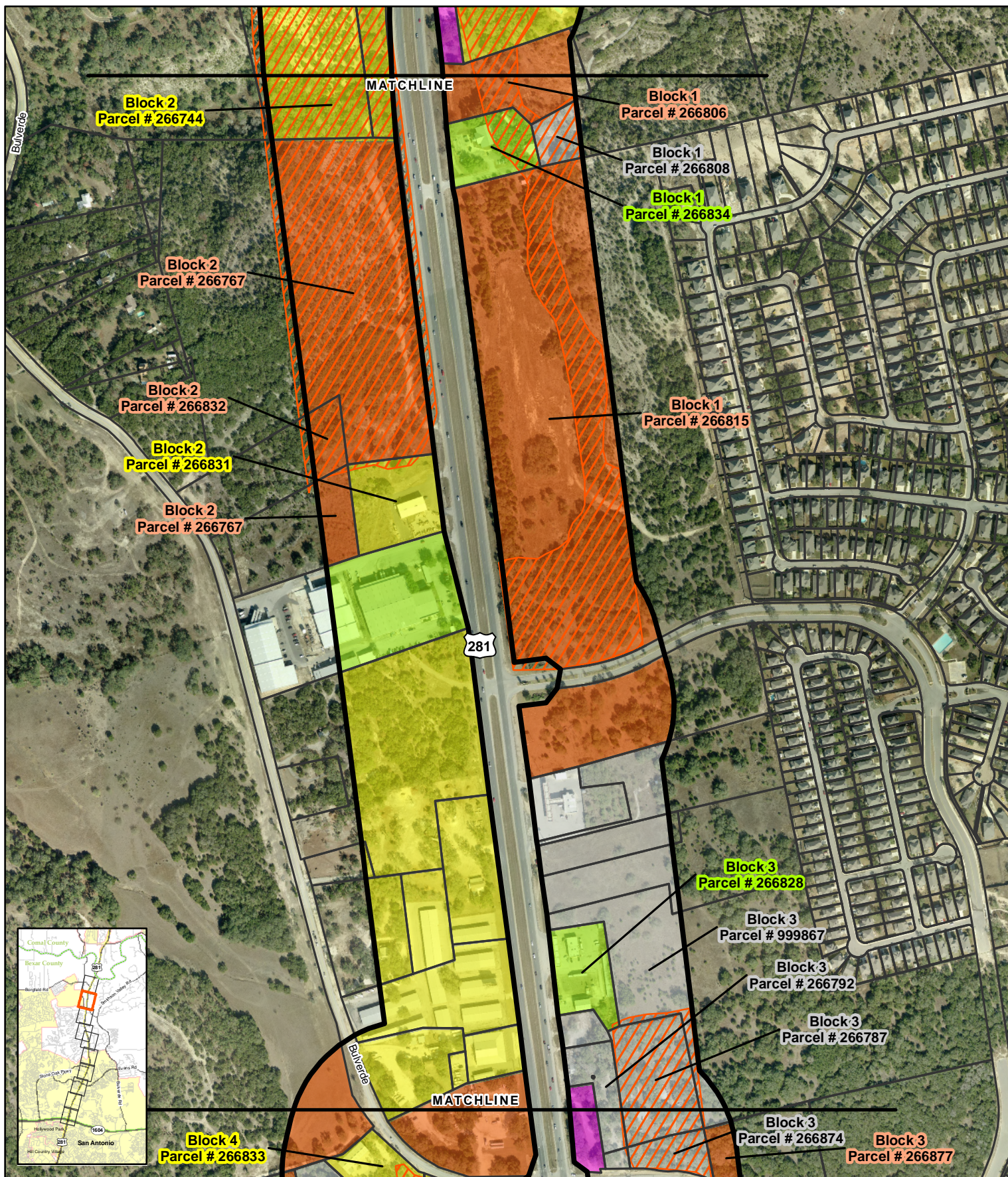
Appendix I4

# ***Biological Opinion & Biological Assessment***

Part 3 of 4

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**Figure 3.2**  
US 281 From Loop 1604 to Borgfeld Road  
Potential GCWA Habitat Blocks  
and Right of Entry Status

**Key to Features**

- Parcel Boundaries
- Study Area (500 ft. Buffer from Existing ROW)
- Golden-cheeked Warbler Habitat
- ROE Granted
- Conditional ROE Granted
- No ROE Granted
- ROE Pending
- No Response

Base Map: 2009 COSA Aerial Photography





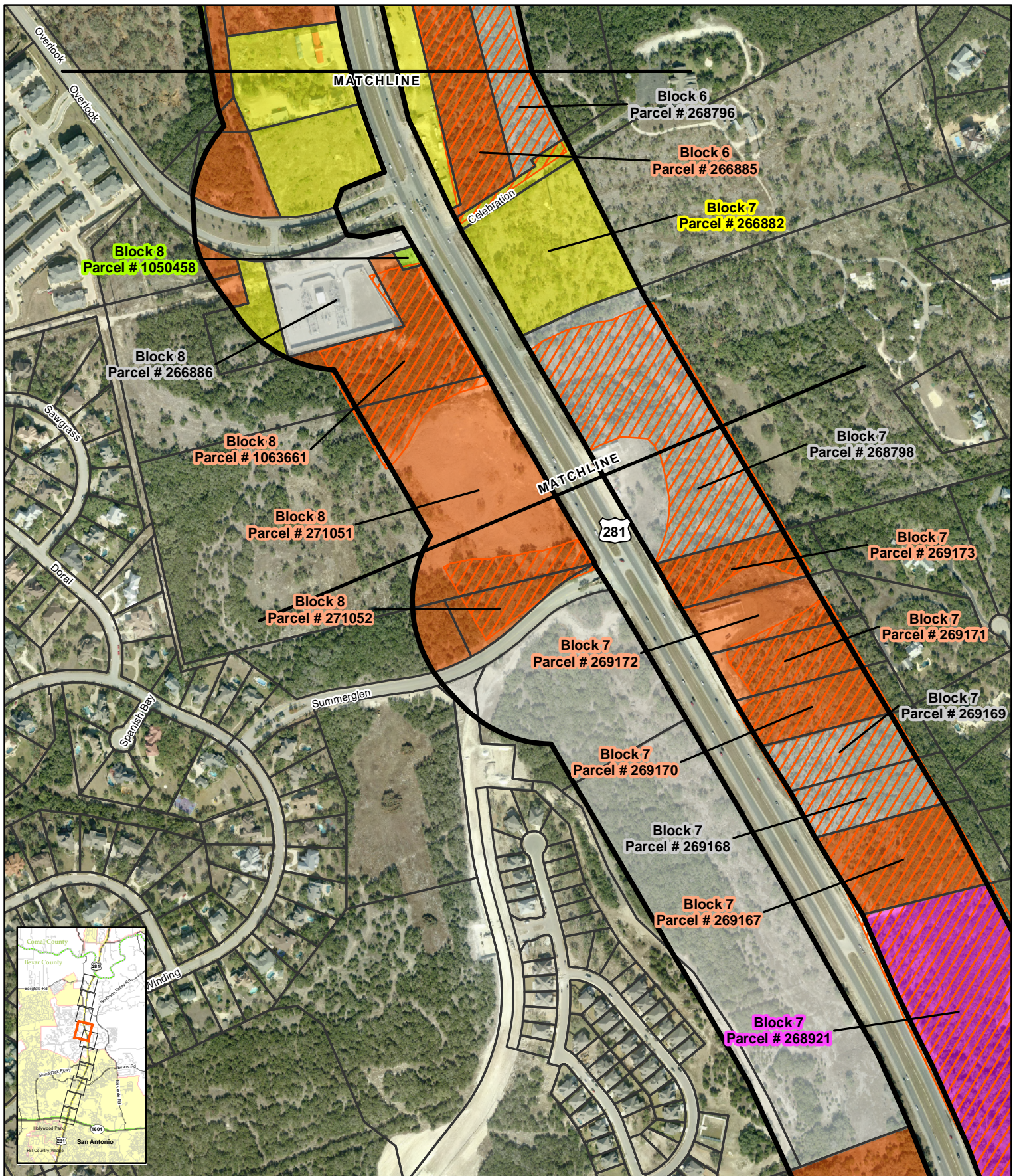
**Figure 3.3**  
 US 281 From Loop 1604 to Borgfeld Road  
 Potential GCWA Habitat Blocks  
 and Right of Entry Status

**Key to Features**

Parcel Boundaries	<b>Right of Entry</b>
Study Area (500 ft. Buffer from Existing ROW)	ROE Granted
Golden-cheeked Warbler Habitat	Conditional ROE Granted
	No ROE Granted
	ROE Pending
	No Response

Base Map: 2009 COSA Aerial Photography





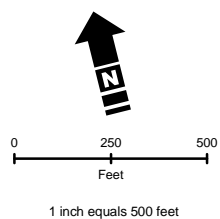
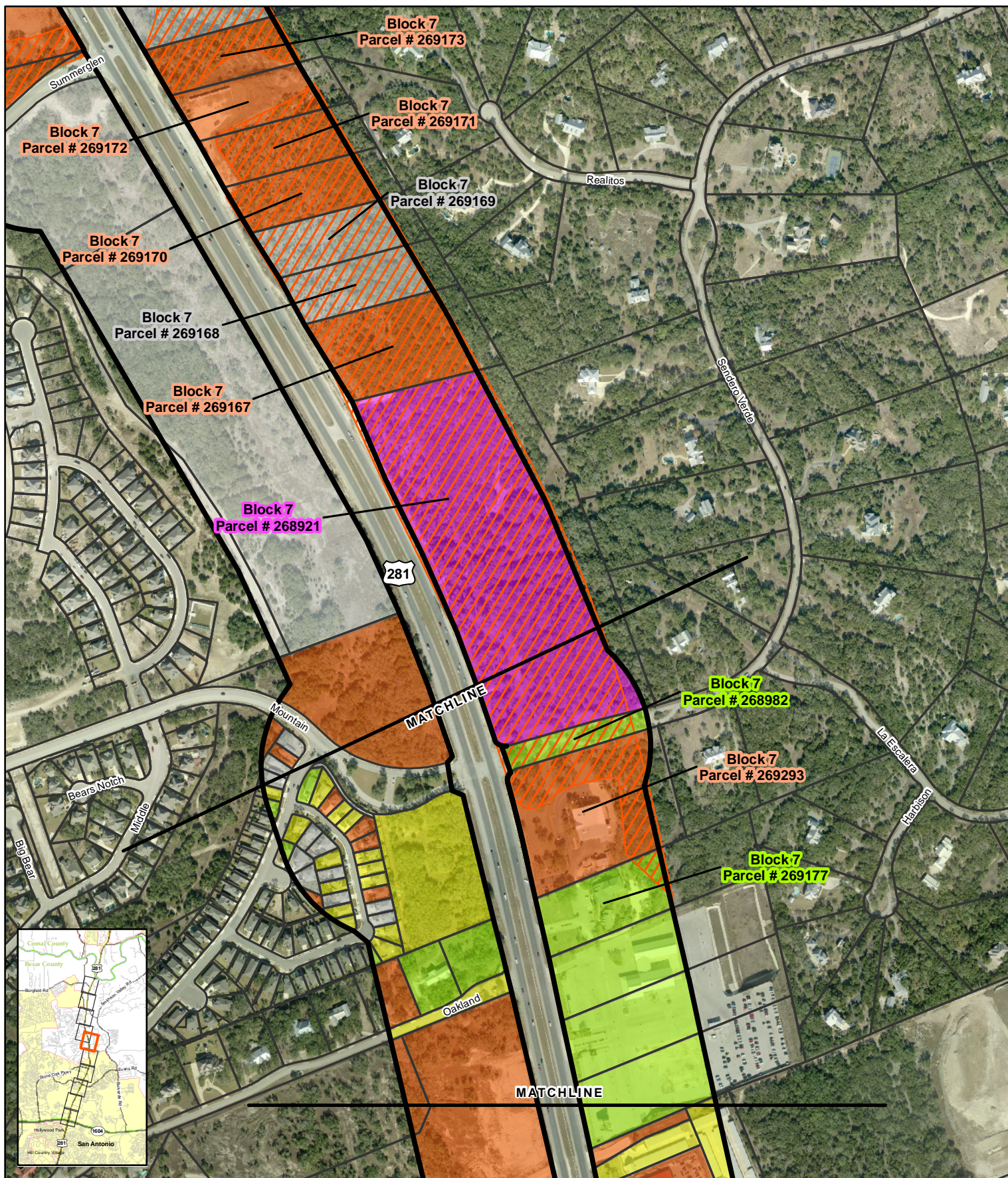
**Figure 3.4**  
US 281 From Loop 1604 to Borgfeld Road  
Potential GCWA Habitat Blocks  
and Right of Entry Status

**Key to Features**

- |   |                            |
|---|----------------------------|
| Parcel Boundaries                                   | <b>Right of Entry</b>      |
| Study Area<br>(500 ft. Buffer<br>from Existing ROW) | ROE Granted                |
| Golden-cheeked<br>Warbler Habitat                   | Conditional ROE<br>Granted |
|   | No ROE Granted             |
|   | ROE Pending                |
|   | No Response                |

Base Map: 2009 COSA Aerial Photography





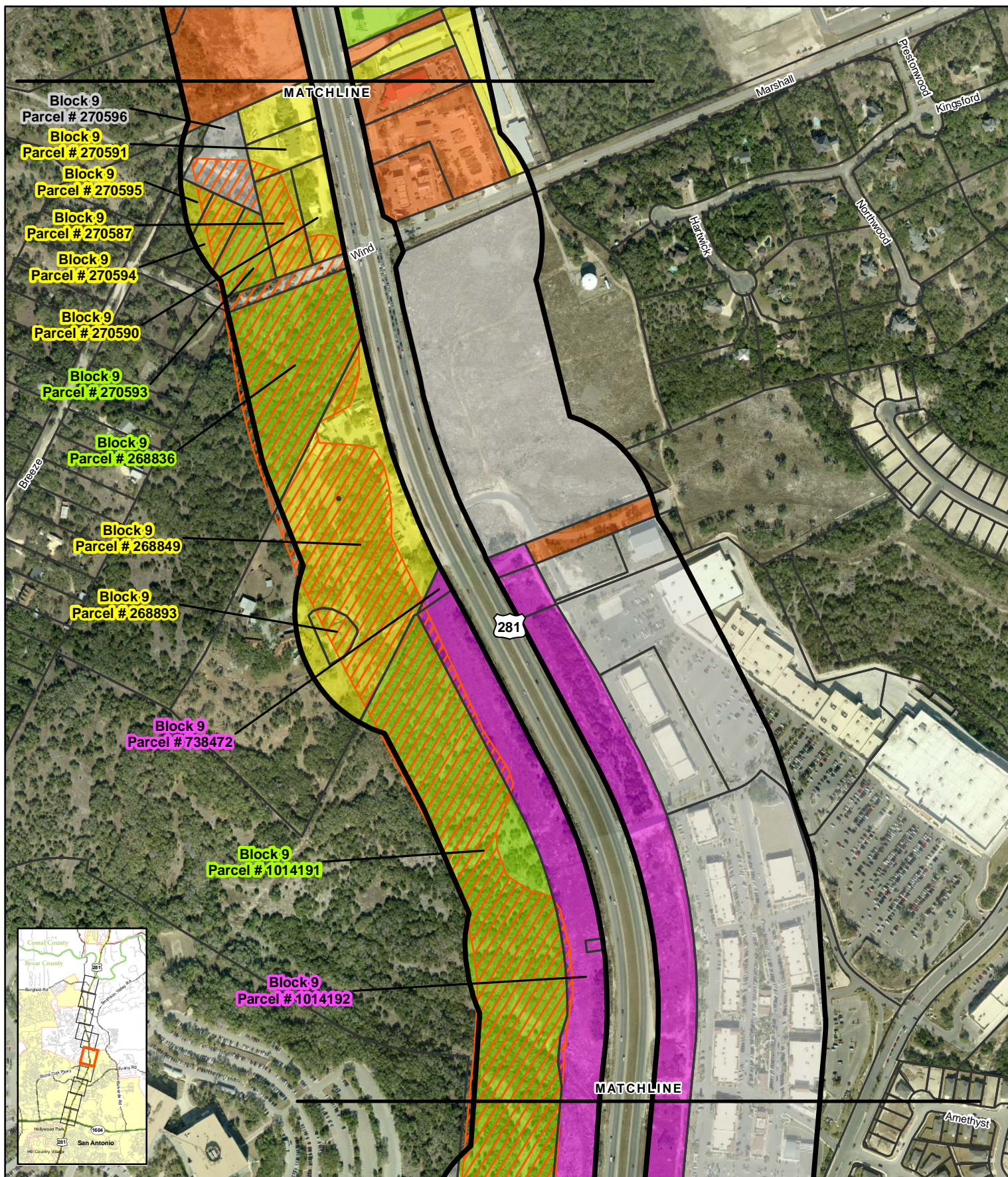
**Figure 3.5**  
 US 281 From Loop 1604 to Borgfeld Road  
 Potential GCWA Habitat Blocks  
 and Right of Entry Status

**Key to Features**

Parcel Boundaries	<b>Right of Entry</b>
Study Area (500 ft. Buffer from Existing ROW)	ROE Granted
Golden-cheeked Warbler Habitat	Conditional ROE Granted
	No ROE Granted
	ROE Pending
	No Response

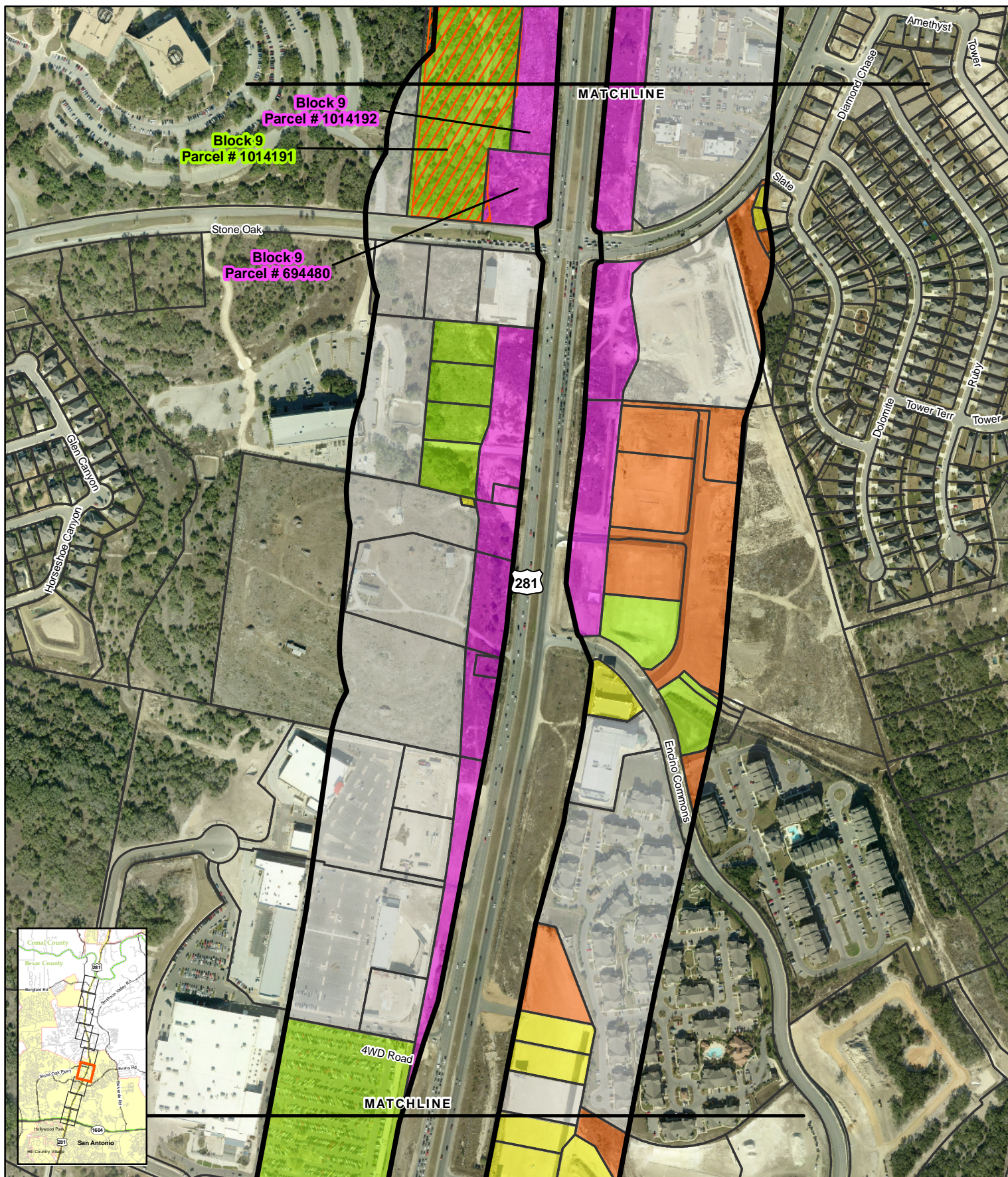
Base Map: 2009 COSA Aerial Photography





**Figure 3.6**  
US 281 From Loop 1604 to Borgfeld Road  
Potential GCWA Habitat Blocks  
and Right of Entry Status





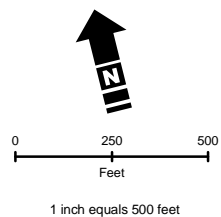
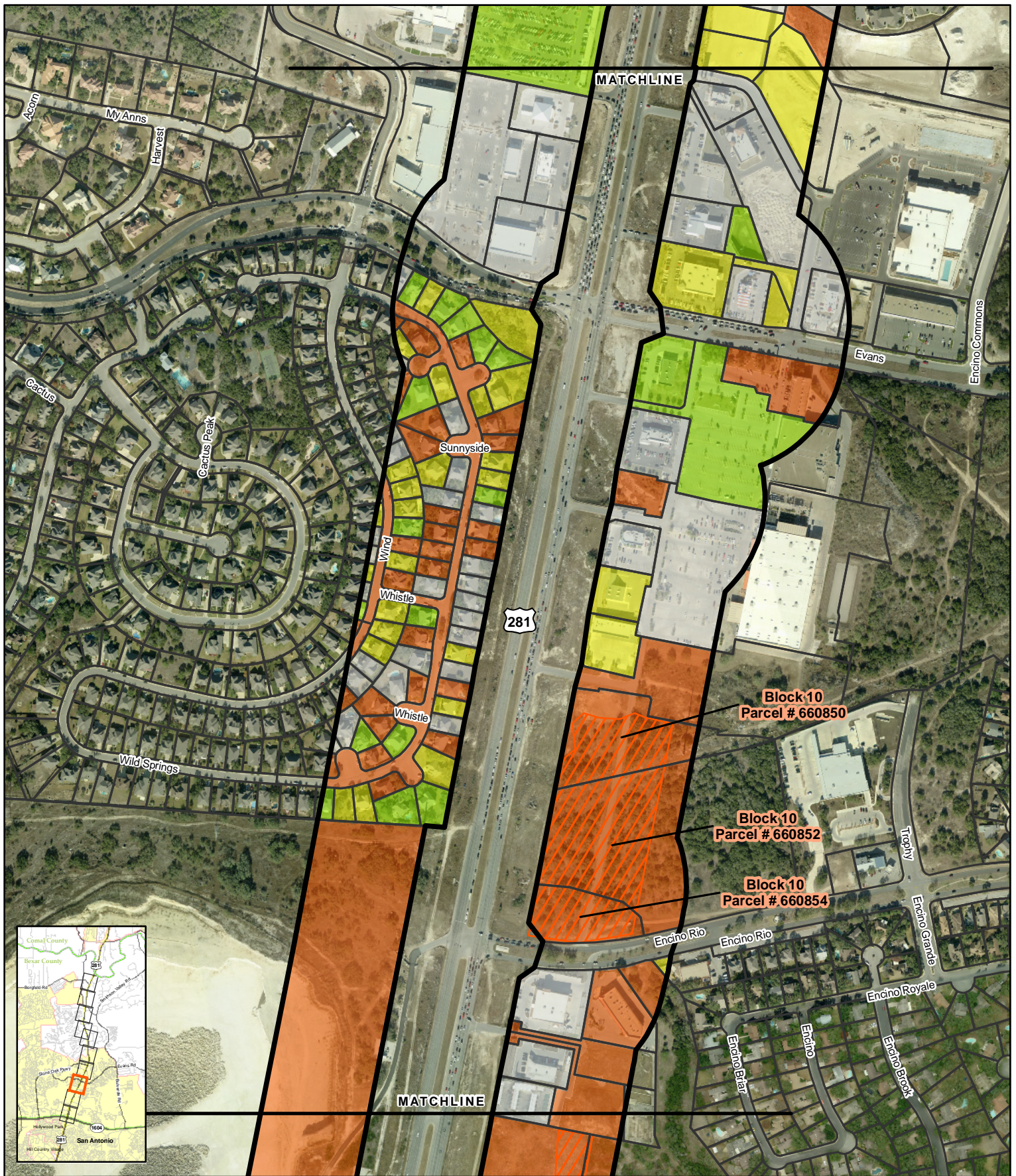
**Figure 3.7**  
 US 281 From Loop 1604 to Borgfeld Road  
 Potential GCWA Habitat Blocks  
 and Right of Entry Status

**Key to Features**

Parcel Boundaries	<b>Right of Entry</b>
Study Area (500 ft. Buffer from Existing ROW)	ROE Granted
Golden-cheeked Warbler Habitat	Conditional ROE Granted
	No ROE Granted
	ROE Pending
	No Response

Base Map: 2009 COSA Aerial Photography





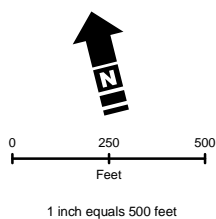
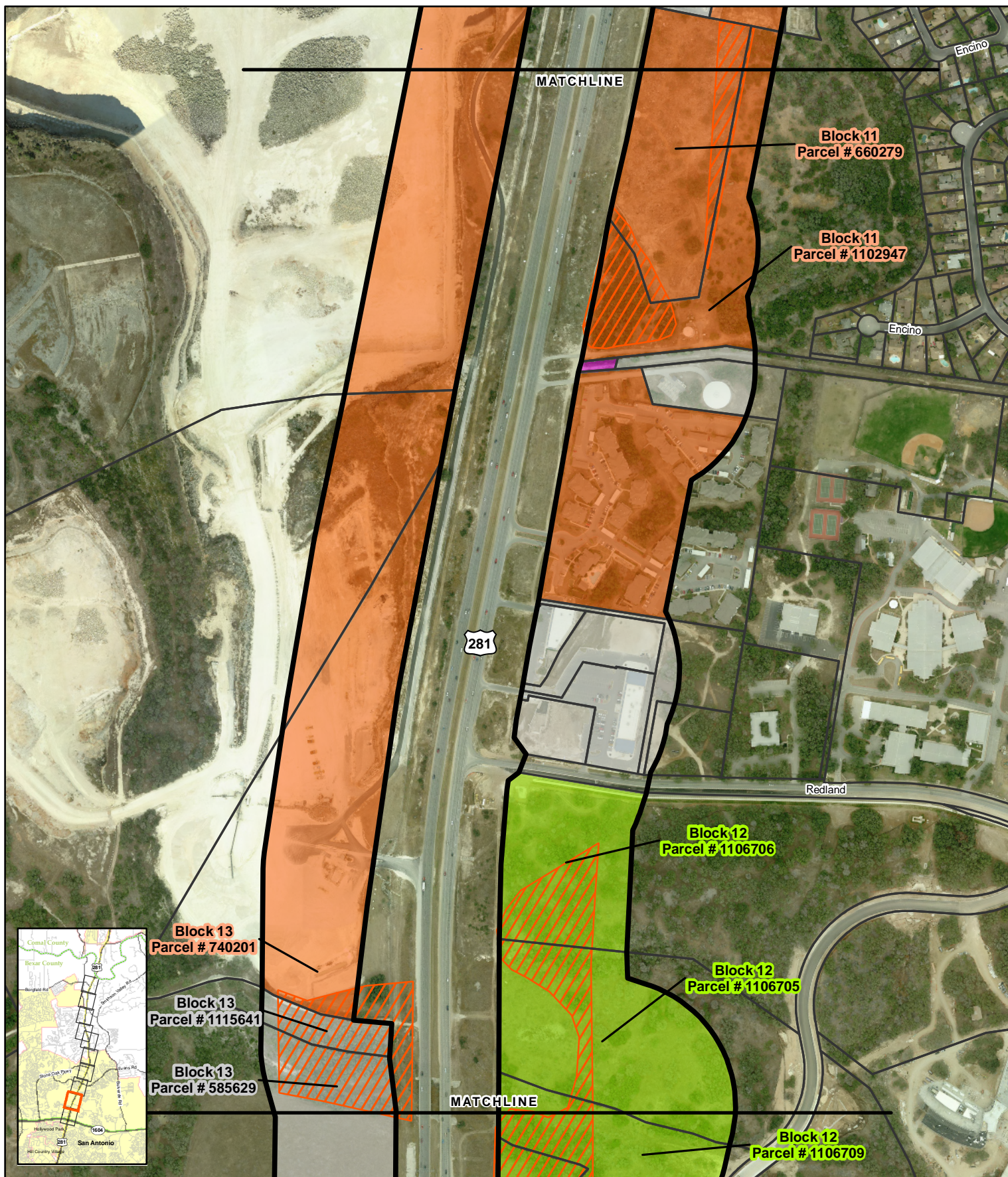
**Figure 3.8**  
US 281 From Loop 1604 to Borgfeld Road  
Potential GCWA Habitat Blocks  
and Right of Entry Status

**Key to Features**

Parcel Boundaries	<b>Right of Entry</b>
Study Area (500 ft. Buffer from Existing ROW)	ROE Granted
Golden-cheeked Warbler Habitat	Conditional ROE Granted
	No ROE Granted
	ROE Pending
	No Response

Base Map: 2009 COSA Aerial Photography





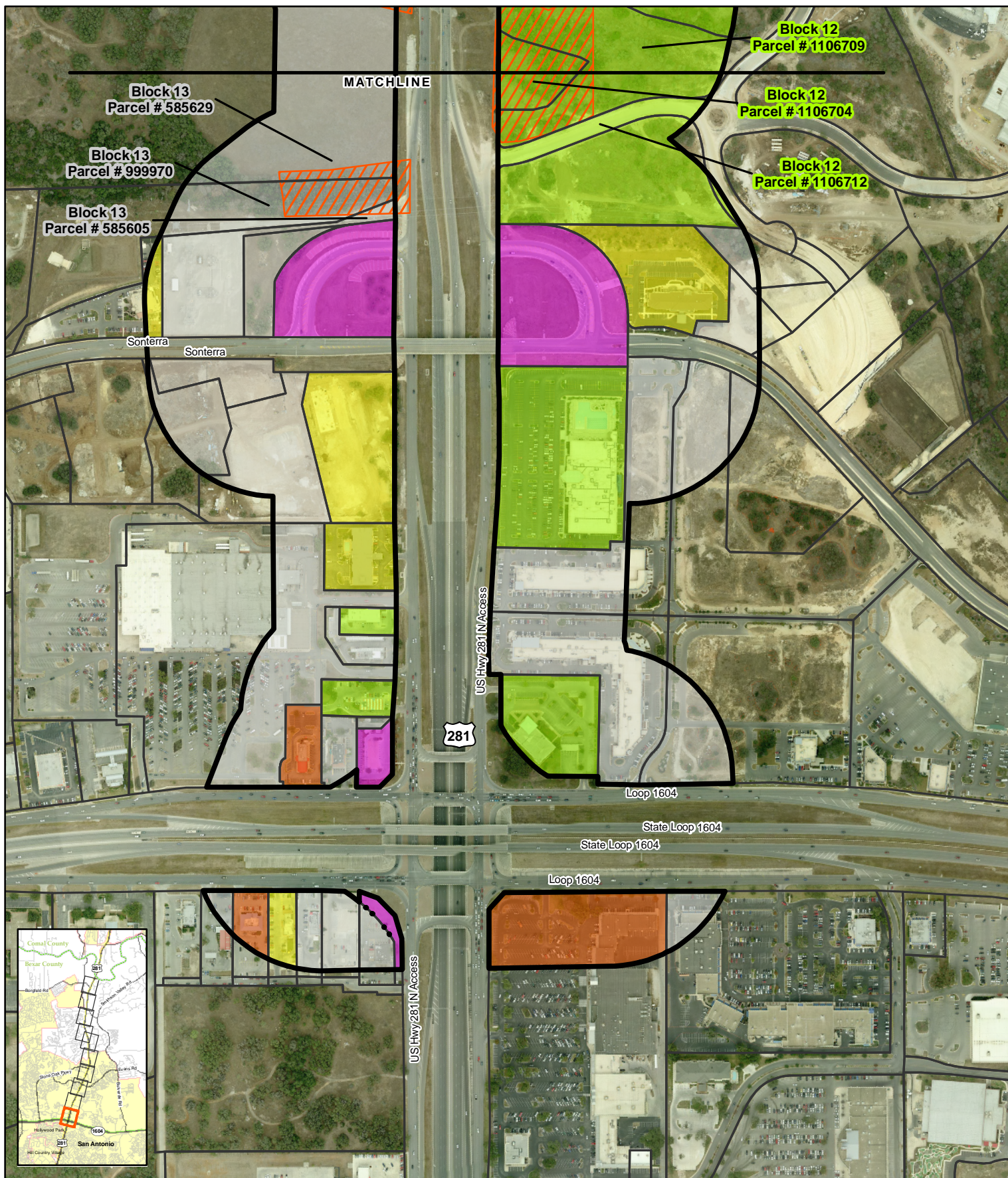
**Figure 3.9**  
US 281 From Loop 1604 to Borgfeld Road  
Potential GCWA Habitat Blocks  
and Right of Entry Status

**Key to Features**

Parcel Boundaries	<b>Right of Entry</b>
Study Area (500 ft. Buffer from Existing ROW)	ROE Granted
Golden-cheeked Warbler Habitat	Conditional ROE Granted
	No ROE Granted
	ROE Pending
	No Response

Base Map: 2009 COSA Aerial Photography





**Figure 3.10**  
US 281 From Loop 1604 to Borgfeld Road  
Potential GCWA Habitat Blocks  
and Right of Entry Status

**Key to Features**

- |   |                            |
|---|----------------------------|
| Parcel Boundaries                                   | <b>Right of Entry</b>      |
| Study Area<br>(500 ft. Buffer<br>from Existing ROW) | ROE Granted                |
| Golden-cheeked<br>Warbler Habitat                   | Conditional ROE<br>Granted |
|   | No ROE Granted             |
|   | ROE Pending                |
|   | No Response                |



## **ATTACHMENT 2**

### **USFWS Section 10(a)(1)(A) Scientific Permit Requirements for Conducting Presence/Absence Surveys for Endangered Golden-cheeked Warblers**

# **USFWS Section 10(a)(1)(A) Scientific Permit Requirements for Conducting Presence/Absence Surveys and Habitat Assessments for Endangered Golden-cheeked Warblers**

U.S. Fish and Wildlife Service, Ecological Services Field Office,  
10711 Burnet Road, Suite 200, Austin, Texas  
(512) 490-0057  
(last updated 01/13/10)

This document identifies survey methods to be used for conducting presence/absence surveys for golden-cheeked warblers (*Dendroica chrysoparia*, GCWA) under a section 10(a)(1)(A) scientific research and recovery permit. Also included are GCWA habitat descriptions from Texas Parks and Wildlife Department's Management Guidelines for GCWAs (Campbell 2003). These descriptions include all vegetation associations that the USFWS considers to be potential GCWA habitat, and as such, areas meeting any of these vegetation associates should be surveyed in accordance with the protocol below.

## **1. Presence/Absence Surveys**

The following minimum procedures must be used to determine presence/absence.

- GCWA surveys must be conducted between March 15 and June 1 with 60 percent of the surveys being conducted prior to May 15 (Pulich 1976, Gass 1996, Bolsinger 1997, Ladd and Gass 1999).
- We recommend survey times start 30 minutes before sunrise (Bolsinger 1997). **All** surveys must be completed within 7 hours of sunrise (Robbins 1981a).
- Surveys should not be conducted during unfavorable weather conditions, such as: a) wind speeds greater than 12 mph, b) fog, c) light to heavy precipitation, and d) temperatures <45°F or >80°F (Robbins 1981b, Verner 1985).
- Surveyors must not conduct surveys when experiencing temporary hearing impairment, such as from a cold (Emlen and DeJong 1981).
- A minimum of five visits with no more than 1 visit within any 5-day period. Total survey time should be a minimum of 1 hour per 25 acres of potential habitat per visit (potential habitat is defined in number 2 below).
- A minimum of 1 hour per visit is needed regardless of the size of the site.
- Taped or playback recordings of GCWA or screech owl calls may be used only after the above methodology (5 visits) has been exhausted and no birds have been located. Recordings must be used to verify negative results (absence of GCWAs). At any one point, recordings should be played for only 30 to 60 seconds, followed by a quiet period of at least 15 seconds before repeating this process once more. After the second quiet period with no detection, permittees may move to another area. Upon sighting or hearing a GCWA, the recording must be stopped immediately.
- Exceptions to this methodology may be allowed only through coordination with and prior written approval by the Austin Office of the U.S. Fish and Wildlife Service. Please call 512/490-0057 and ask for the GCWA species lead.

## 2. Potential GCWA habitat (Campbell 2003):

### Vegetation Associations Where GCWAs Are Expected To Occur

- Woodlands with mature Ashe juniper (cedar) in a natural mix with oaks, elms, and other hardwoods, in relatively moist (mesic) areas such as steep canyons and slopes, and adjacent uplands are considered habitat that are highly likely to be used by warblers. Mature Ashe junipers are trees that are at least 15 feet in height with a trunk diameter of about five inches at four feet above the ground (dbh). These areas generally will have a nearly continuous canopy cover of trees with 50- 100% canopy closure and an overall woodland canopy height of 20 feet or more.

### Vegetation Associations That May Be Used By GCWAs

- There are a number of other vegetation associations that may also be used by GCWAs, depending on the location, size of tract, land use, adjacent landscape features, and vegetation structure. These vegetation associations are most often used by GCWAs when they are located adjacent to or near areas where GCWAs are expected to occur.
  - Stands of mature Ashe juniper (trees with shredding bark), over 15 feet in height and diameter at breast height (dbh) of about 5 inches, with scattered live oaks (at least 10 percent total canopy cover), where the total canopy cover of trees exceeds 35 percent and overall woodland canopy height is at least 20 feet.
  - Bottomlands along creeks and drainages that support at least a 35 percent canopy of deciduous trees (average canopy height of 20 feet), with mature Ashe juniper (at least 15 feet and 5 inches dbh) growing either in the bottom or on nearby slopes.
  - Mixed stands of post oak and/or blackjack oak (10-30 percent canopy cover), with scattered mature Ashe juniper (15 feet in height and 5 inches dbh), where the total canopy cover of trees exceeds 35 percent and overall woodland canopy height is 20 feet.
  - Mixed stands of shin (scalybark) oak (10-30 percent canopy cover) with scattered mature Ashe juniper (15 feet in height and 5 inches dbh), where the total canopy cover of trees exceeds 35 percent and overall woodland canopy height is 20 feet.

### Vegetation Associations Where GCWAs Are Not Expected To Be Found

- The following vegetation associations are not typically considered GCWA habitat, and are unlikely to be used by GCWAs unless these associations are adjacent to GCWA habitat, as described above. This is important because areas consisting of vegetation associations not typically considered GCWA habitat that are adjacent to occupied habitat may in fact be used for foraging. This is especially true for sparsely wooded grassland or low-impact agriculture, but much less so for industrial, commercial, and medium to high density residential areas. When adjacent to GCWA habitat, as described above, the following vegetation associations should be considered a part of usable GCWA habitat:
  - Stands of small Ashe juniper, averaging less than 15 feet in height and 5 inches dbh. This includes small juniper that invades open rangelands, previously cleared areas, or old fields. These areas are often dry and relatively flat, and lack oaks and other broad-leaved trees and shrubs.
  - Pure stands of larger (greater than 15 feet in height and 5 inches dbh) Ashe juniper, with few or no oaks or other hardwoods.
  - Open park-like woodlands or savannahs (even with old junipers) where canopy cover of trees is less than 35 percent. These areas often have scattered live oaks and other trees.

- Small junipers and other trees coming up along existing fence lines.
- Small junipers (less than 15 feet tall) coming up under larger hardwoods where junipers have been removed in the past 20 years.

### 3. Reports:

#### Survey & Assessment:

- Bird Surveys:* Go to: <http://www.fws.gov/southwest/es/AustinTexas> and scroll down to “Golden-cheeked warbler (GCWA) and black-capped vireo (BCVI) reporting for 10(a)(1)(A) Scientific Research and Recovery Permits” for the reporting forms. Reports for surveys conducted according to protocol (those completed by June 1) must be submitted no later than June 30<sup>th</sup> of that same year. Reports for bird detections or surveys not conducted according to protocol must be submitted within 10 business days of completion of the survey. **Survey reports for this data should be submitted electronically to GCWAreporting@fws.gov and should be titled “GCWA Bird Survey Report.”**
- Habitat Assessments:* If any area of any assessed property meets any of the vegetation associations given under number 2 above and either: a) those associations are considered suitable GCWA habitat but are not surveyed, or b) a determination of non-GCWA habitat was made, then a report on those areas must be submitted within 5 business days of that determination. **Habitat assessment reports should be submitted electronically to GCWAreporting@fws.gov and should be titled “GCWA Habitat Assessment.”**

#### Each report should include:

1. A map with a clear understanding of the location of that property within the county;
2. an aerial photo with:
  - i. the date the photo was taken (no older than 2006), and
  - ii. the property boundary;
3. detailed descriptions of the habitat on site;
4. detailed descriptions of what factors were assessed to make the determination (for example, aerial photographs, Landsat imagery, and/or site visits); and
5. an explanation of why a survey for the GCWA was not performed or why the site was determined to be unsuitable.

#### Reporting With GIS Data:

If reporting with GIS shapefiles, it is not necessary to include the information requested in numbers 1 and 2 above in the report. Instead, complete the “GCWA Habitat Assessment” form found at <http://www.fws.gov/southwest/es/AustinTexas> and submit it as the attribute table with the shapefile(s).

#### Habitat Assessment Non-Concurrence:

1. We will do our best to respond in writing within 10 business days if we do not concur with the non-habitat determination.
2. If we notify you that we do not concur with the non-habitat determination, you must notify the person that hired and/or requested you do the assessment within 10 business days of our non-concurrence.

Annual:

It is not necessary to resubmit the data reported under a) above. However, annual reports must include detailed descriptions of all habitats found on all parcels surveyed and submitted under a). No further information is necessary in the annual report for the items required under b). **Annual reports should be submitted electronically to GCWAreporting@fws.gov and should be titled “GCWA Annual Report.”**

Literature Cited

- Bolsinger, J.S. 1997. Patterns of use and variation in the songs of the golden-cheeked warbler (*Dendroica chrysoparia*). Master's thesis, Univ. of Massachusetts, Amherst.
- Campbell, L. 2003. Endangered and threatened animals of Texas: their life history and management. Golden-cheeked warbler (*Dendroica chrysoparia*). Texas Parks and Wildlife Department, Austin, Texas.
- Emlen, J.T. and M.J. DeJong. 1981. The application of song detection threshold distance to census operations. Pp. 346-352. in C.J. Ralph and J.M Scott (eds.). Estimating numbers of terrestrial birds. Studies in Avian Biology No. 6. Cooper Ornithological Society. Lawrence, Kansas. 630 pp.
- Gass, L. 1996. Nesting behavior of golden-cheeked warblers in Travis County, Texas. Master's thesis, Southwest Texas State Univ. (now known as Texas State Univ.), San Marcos.
- Ladd, C., and L. Gass. 1999. Golden-cheeked warbler (*Dendroica chrysoparia*). In The Birds of North America, No. 420 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA. 24 pp.
- Pulich, W.M. 1976. The Golden-cheeked warbler, a bioecological study. Texas Parks and Wildlife. 172 pp.
- Robbins, C. 1981a. Effect of time of day on bird activity. Pp. 275-286. in C.J. Ralph and J.M Scott (eds.). Estimating numbers of terrestrial birds. Studies in Avian Biology No. 6. Cooper Ornithological Society. Lawrence, Kansas. 630 pp.
- Robbins, C. 1981b. Bird activity levels related to weather. Pp. 301-310. in C.J. Ralph and J.M Scott (eds.). Estimating numbers of terrestrial birds. Studies in Avian Biology No. 6. Cooper Ornithological Society. Lawrence, Kansas. 630 pp.
- Verner, J. 1985. Assessment of counting techniques. Pp. 247-302. in R.F Johnston (ed.). Current Ornithology, Volume 2. Plenum Press, New York.